MICHIGAN FARMER.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC ECONOMY.

Volume III. Jackson, December, 1845. Number 9.

PUBLISHED MONTHLY,

BY H. HURLBUT,

EDITOR AND PROPRIETOR.

FIFTY CENTS A YEAR:

Five copies for Two Dollars—payable in advance.

[For particulars see last page.]

For the Michigan Farmer.

Hints to Cultivators of Fruit.

NUMBER VII.

Curculio.—I stated in a former communication upon the subject of the Curculio, that I intended to try an experiment with these depredators, but I was prevented by my fruit being destroyed by the frosts of spring. The experiment I intended to make, was, to cover the surface of the ground around the tree as far as the branches extend, with a thin coat of salt. I since learn from the recent work of Mr. Downing on Fruit, that the experiment has been tried with complete success. He recommends the practice, as well on account of its destructive influence upon the Curculio, as of its affording a good manure for the plum. He thinks the best time for applying the salt is just as the plums begin to fall, and that the ground should be kept thoroughly coated with it, till the plums that have been stung are all fallen. The salt will kill the larvæ before they can penetrate the ground. My plan was to apply the salt in the spring before they left their winter quarters, under the impression that it would kill them before they hatch, and thus save my plums. I still think that this would do the business quite as effectually—perhaps not; but should it fail, it will not prevent another application of salt at the time proposed by Mr. Downing. Previous to applying the salt, the ground should be made smooth by hoeing and raking, and then it should be trodden hard. If the weather should continue dry, one application would probably be sufficient.

A HORTICULTURIST.

For the Michigan Farmer.

Another Method for the Destruction of Worms.

MR. EDITOR:—In the columns of your valuable paper for last month, under the head of "Hints to the Cultivators of Fruit," I noticed a few remarks, urging the destruction of worm's nests "as soon as they make their appearance." The method there recommended, is no doubt as good an one as can be devised. But it sometimes so happens that when these depredators, without leave or license, are making sad havoc of fruit and fruit trees, we have no *turpentine*, with which to saturate "tow or cloth, to be set on fire and thrust into the nests while blazing;" consequently, the fruit is nearly or quite destroyed, and the trees frequently killed. This, however, need not be a necessary *effect* of the absence of *turpentine*.—Whoever will provide himself with a pole of suitable size and length, and nicely broom one end of it, to be thrust into the nest, can, by exercising a little skill in the operation, take one wholly from the tree, and having a pail full of hot water at hand, entirely destroy its inhabitants by scalding. Strong ley is quite as good as boiling water.—In this way, in 1843, I successfully arrested the high-handed career which an army of worms had unceremoniously commenced in an orchard of mine in Oswego Co. N. Y., numbering about 150 trees, and saved it almost harmless, from their "with malice aforethought assault." I believe that there was no other orchard near me, that was not very considerably injured. I found it necessary in order to destroy them, to three times pass through my orchard on this *mission*. When I commenced upon them, there were not more than 10 or 15 trees free from them. At the expiration of four or five days, after the first effort was finished, those that escaped, had so managed as to "pick up their crumbs" sufficiently to make something of a "show" a second time, when the same kind of *sauce* was ladled out to them again.—This proved quite as unpalatable and destructive as the first, in proportion to the number then found. A third effort was made upon the "stragglers," after which hardly enough collected in any one place to say "we." This was done when some of my neighbors were wondering how under the sun, they could get rid of them—some poorly emulating my example, and the remainder, thoughtfully inquiring, "Who has turpentine?"—I know there are many who maintain that they cannot be destroyed in this way, for as they say, "They have tried it." But if the truth was known, they doubtless "tried it" as some of my neighbors did—waited till Time had placed her *fore*-lock beyond their reach—till the worms had finished *napping* in the morning and gone "abroad"—till they had become very numerous and *large*, and acquired a right to the trees, by *prescription*, which no *form* of *action* would enable the owner to *recover*. The *action* should be commenced before it is too late—while the nests are small and the worms *green*. Nor should the work be half done, for if

the nests be but partially torn from the trees, what escape will very shortly so "multiply and replenish" as to be sufficiently numerous to destroy all that was designed to be saved; or if they be wholly torn off and thrown upon the ground, without being destroyed, they will shortlyre-appear in their places, bsily engaged iun their mischievous vocation. In this business, too, let it be remembered that, "a stitch in time, saves nine;" and that no work is *done*, till it is WELL DONE.

A. WILLIAMS.

Otisco, Oct. 25, 1845.

For the Michigan Farmer.

THE FRUITS AND FRUIT TREES OF AMERICA; *or the culture, propagation and management, in the garden and orchard, of fruit trees generally, with descriptions of all the finest varieties of fruit native and foreign, cultivated in this country; by A. J. Downing, corresponding member of the Royal botanic society of Berlin; Indiana; Cincinnati, etc. Illustrated with many engravings*, NEW YORK AND LONDON, WILEY & PUTNAM. 1845; pages 594.

This is the title of a work of uncommon merit, which should be in the hands of every person who desires to make a choice selection of fruits, and learn how to take care of them. There is a vast amount of ignorance upon the subjects treated of by our author, among a large portion of those who attempt to cultivate fruit trees. They are ignorant of the choicest varieties of fruit. If the tree is but grafted, it is enough, for they seem not to know that much that is cultivated and sold, by many of our Nurserymen is but of third and fourth rate quality—far inferior to many native varieties. They are ignorant of the size most suitable for setting. If the tree is large, and tolerably straight, no matter how unthrifty, or unhealthy it may be, they take it, being too ignorant to distinguish between a sickly, and healthy one. They are ignorant of the proper manner of planting them, of the kind of soil most suitable for them, of the way in which they are to be treated in order to keep them in a healthy state; they are as likely to stick them into a cold, damp clay, as into a warm rich soil—into their meadow as into ground that is thoroughly tilled; and then if their trees don't grow equally well with their more intelligent neighbor's, they are too self-complacent, even to suspect that they are in fault, and all the blame is thrown upon the poor nurseryman. They are in fact ignorant of every thing about the management of trees, or of the diseases to which they are liable, or their remedies. This book will most certainly enlighten the ignorance of such, if they will but read it.—Having purchased a copy, I had not read a hundred lines in it, before I felt that I had got the worth of my money, and rather than not be the owner of it, I would pay four times the amount that it cost me.

Mr. Downing gives the history, use, cultivation, and modes of propagating some twenty-four species, and descriptions of some nine hundred varieties of fruits: his remarks on the management of fruit-trees are simple, sensible, and of great value. His descriptions of fruits are minute, plain and exact, and measurably stripped of technicalities, with which many other works of the kind abound, to the great perplexity of the unlearned. The work contains over two hundred plates mostly of fruits, giving the outline of their size, and shape, and as you read their description with one eye upon the fruit, by the aid of a little imagination, (far less than it would require in a man of sense to relish one of the modern novels,) one may enjoy something of the luxury which is experienced in partaking of a luscious Buerre pair, or a Bigarreau cherry. The veriest novice, with Downing's book in his hand, can hardly fail to determine whether the fruit he gets into bearing is genuine, and of catching the rogue if perchance he has been cheated.

Every Nurseryman who regards accuracy and the quality of fruit he cultivates for sale, should be the owner of it. In a word, I have never found so much valuable practical matter embodied in any single work of the kind,

A HORTICULTURIST.

For the Michigan Farmer.

Beets and Carrots--an Experiment.

Mr. Hurlbut:—I have long been of the opinion that our sandy soil is well adapted to carrots. Last spring I tried an experiment on a small scale to cultivate this root and beets. I prepared half an acre of land, manured it well with fine manure, plowed it the first days of May, then harrowed it and commenced planting the beets, two seeds in a hill, say one foot apart each way, about a fifth of the whole piece. I then marked out with a chain one third of the piece, in drills one foot apart, and sowed to carrots. I finished planting the beets and carrots about the 15th of May. About the first of June, I plowed the remainder of the ground, and planted to potatoes. The beets and potatoes grew rapidly, and so did the weeds; but the carrots did not come up in a long time, and but very few made their appearance at all. The weeds, in spite of all my exertions got the mastery, and took possession.

I nearly gave up the idea of raising any carrots, but making one bold effort, succeeded in gaining a partial victory over the weeds. The carrots stood very thin; I hoed them three times in the course of the season, and at the last hoeing saw they grew rapidly.—About the first of July I sowed a few ruta bagas in the vacant places.

On harvesting the crop this fall, I got 80 bushels of beets, 80 bushels of carrots, 28 of ruta bagas, and 32 of potatoes; making in all 220 bnshels from half an acre. The carrots and beets were very large: the beets weighed from eight to nineteen pounds, and the carrots were as large accordingly.

Now, sir, my object in writing this is to gain information. If some one will communicate in your valuable paper touching the cultivation of these roots, and especially of carrots, he will do me a favor, for I am determined to

try the crop until I am convinced one way or the other. If it will succeed well, it certainly will be profitable for feed in this section of the country, where grass does not flourish as well as wheat. We want to improve our stock by good keeping.

SOLOMOM RUSSELL.

Columbia, Nov. 8th 1845.

Remarks.—We thank Mr. Russell for giving us the result of his experiment, and would second the request to have something further on the cultivation of the carrot. Unless we are greatly mistaken, this is yet destined to become an important field crop. The only obstacle in the way of its cultivation appears to be its slow germination and growth in its first stages. ED.

Leached Ashes.--Inquiries.

EDITOR OF MICHIGAN FARMER:

I send you $1 for the Michigan Farmer. I want the whole of the current volume, and the balance apply on next volume. * *

Now a word of inquiry.

1. How can leached ashes be applied to land to the best advantage?

2. On what kind of soil will it do best?

3. Is it good as a top dressing for wheat on sandy soils?

4. If leached ashes are put upon wheat, what amount per acre?

5. Are they good on black muck soil?

6. Are they good to be mixed with stable manure and spread upon *green sward*—the sward to be turned over this fall and planted to corn in the spring? If they are, should they be spread on before breaking up, or upon the furrows, and what quantity?

7. Are they good upon ground to be planted with potatoes? Yours,

G. CARPENTER.

We will reply to these several interrogatories in course.

1. There are various modes of application, which would be highly advantageous, and each best adapted to particular circumstances. They may be applied, as in the instance mentioned in our last number, to sward land, which has been plowed up in the spring, for a summer crop, and then intermixed with the surface soil by the harrow. They may be spread upon stubble land with stable manure, and plowed under. They may be beneficially mixed with marsh muck which has been drawn out on the upland. The remaining potash, and other salts and earths of which they are composed, would tend to counteract the sour and inert qualities of muck fresh from the marsh, and promote its decomposition; but for this purpose *unleached* ashes would be moree fficacious. We should mention their use with muck, marl and stable manure in the compost heap, were it not that this process involves too much labor to be considered practicable here. To reap the greatest advantage from them, they should be applied either with stable manure, or on sward land, or land already rich in vegetable mould; as they consist wholly of the inorganic constituents of plants, and of course can supply no other to other plants, the soil must be supplied with nitrogenous matters, and vegetable mould from other sources.

We should recommend their application in the spring rather than in the fall, and if applied alone, that it be to the surface, instead of burying deeply in the soil, because, as new chemical combinations are formed, their waste would be chiefly by leaching, not evaporation.

2. Their good effect is probably greatest on a light sandy soil, as they improve the texture, by making it more retentive, and supply it with some inorganic constituents, in which such a soil is apt to be deficient.

3. They would doubtless be beneficial—but the ashes having parted with most of their potash, and other most soluble ingredients, in the process of leaching, their beneficial effects might be expected to be not suddenly manifested—time being requisite for new combinations to be formed before becoming suitable for the use of plants. Hence the effect might be expected to be quite as perceptible, the second year after their application, as the first.

4. We cannot speak from observation, but from instances related in other journals, we infer that 150 to 200 bushels to the acre might be applied with safety and advantage, though a less quantity might suffice, if the article were not very abundant. There would be little danger of an overdose, since, as already intimated, after leaching, the remaining properties of ashes are not of a very active nature.

5. Good, unquestionably, for a reason already given.

6. We do not think fall application of manure is good economy. They are subject to great waste by leaching, during the winter and early spring. Nor are we in favor of the late fall-plowing of light soils, (such as we infer our correspondent's to be,) even though they be in green sward, unless for the destruction of the cut worm or other insects. Better to defer both the plowing and manuring until spring; then the mixture of ashes with manure would be beneficial as mentioned in answer to 1st inquiry. Quantity of ashes, say from 100 to 200 bushels to the acre.

7. When ashes are applied only to potatoe ground, it is said to give the roots a scurfy appearance. They are not, however unfavorable to their growth, and would probably act, in some measure, as a preventrtive of the potatoe rot, which may not improbably extend its ravages here as it has done elsewhere.

For further information we subjoin the following from the Maine Cultivator.

Leached Ashes.—It has been ascertained that ashes are deprived of but a limited proportion of those elements which are the most efficacious in promoting vegetable increment, by leaching. In some cases where leached ashes have been applied, the effect seemed to be nearly if not quite as great as that from unleached ashes. In the summer of 1843, we had the curiosity to spread eight bushels of this substance on about two square rods of grass land. The first year, we were unable to discover any, even the slightest difference in the product; but this year the grass, on the soil to which the ashes was applied, was nearly twice as heavy as on any other part of the field, and now (Sept. 17,) there is a most luxuriant aftermath, and so much heavier indeed, that the limits of the land so dressed, can be ascertained, even at a distance, to the exactitude of an inch.

For the Michigan Farmer.

Fencing.

NO. I.

Stone Fence.—In consequence of the great abundance of fine fencing timber, with which Michigan in its primitive state abounded, little thought or attention was bestowed upon the subject of economy in fencing. But not so now.—The forests that had for centuries defied the blasts of Boreas have fallen before the axeman's stroke and disappeared, especially in the older portions of the State, so that the farmer begins to think that his timber, now becoming scarce, is too valuable to be used in constructing the rude and unsightly rail fence, adapted only to those portions of country where there is a superabundance of timber, but unfitted and wasteful in the extreme, where there is a sparseness of that material, as is the case upon our openings, plains and prairies. The subject of economy in fencing, I am happy to learn, is beginning to arrest the attention of the farmer. It is indeed a matter of no small moment when produce of every kind bears so low a price, as to compel the farmer to study the strictest economy in every thing, in order to meet the current expenses of the year. I propose, Mr. Editor, to throw out a few thoughts upon this subject, in the hope of provoking others of more experience than myself to do the same. In some portions of our State, there is sufficient stone upon, or so near the surface of the ground, as to be thrown up from year to year by the plow, to build more or less fence. There are several modes of making fence of stone, but I shall notice only three.

1st. The first that I shall notice is made entirely of stone, and is commenced by laying two lines of stone running parallel to each other, about three feet apart, the space between is usually filled up with smaller stones to a level with the outer lines; great care scould be observed in laying up the succeeding tiers,so as to bind the wall together. This is done by stretching every few feet, a stone across the wall, or in case stones of sufficient length cannot be found, those of half the width may be taken, letting them meet in the centre, binding where they meet by placing a heavy stone upon them. Great care should also be had in laying up the stones, so as to press to the centre, otherwise when the wall is elevated by the front, it will be thrown down.

2nd. This a half wall, and is built like the above, except that it need not be so wide nor so high.—At every six or seven feet place a post, letting the bottom rest upon a flat stone, which will elevate it some three or four inches above the surface of the ground; to these nail one or two boards, according to the height of the wall, or let the posts be morticed and rails inserted, in this case the posts may stand twelve or fourteen feet apart.—When but fifteen or sixteen years old I assisted in laying up a wall of this kind, using white cedar for the posts and hemlock for boards; when I last saw it, it had stood some 25 years, and was apparently as good as when first built.

3d. The third kind is made by laying two rows of stone, as described in No. 1, of about equal height; the space is then filled up with earth, closely packed to a level with the lines of stone; upon this is laid a thick sod, and then a layer of stone and earth as in the commencement; this process is continued until the wall is raised to a sufficient height. Travelling some years since in central New York, I saw much of this wall, some of which, I was informed, had stood several years. At a little distance it looked like an embankment of earth, covered with green sward, and was very neat and beautiful. Although not then a farmer, it interested me so much that I was led to inquire of a man, whom I shortly after found engaged in laying up wall by the road side, whether the severe frosts of winter did not throw it down; he gave me to understand that it was less liable to be injured, than a wall laid up exclusively of stone, and the appearance of the walls I saw, served to confirm his statement. The only objection to this kind of wall that suggests itself to my mind is, that the sod will die before is becomes thoroughly rooted, especially if laid up in a dry season.

Farmers who have stone in any quantity will find it good economy to lay them up into a wall. The stone may be drawn and laid up at intervals of leisure, when little else would be done, with a little industry, and a careful husbanding of time, a farmer would in the course of the year erect quite a long string of fence, which, if well done, would force the pleasant reflection upon his mind, that what he had done would not have to be done again during his life time, and probably not, during the life time of his children. Where a farmer has an abundance of stone, a whole wall would perhaps be the most economical, but as few have an abundance, I am inclined to think that the last, or No. 3, would be the cheapest, as it certainly is by far the most beautiful. Petra.

For the Michigan Farmer.

Box for Bordering--Inquiry.

Mr. Editor:—Can you, or any of your correspondents, tell me why the Box so much used at the east for bordering will not flourish in this state? While it flourishes on Long Island and the city of N. Y., it does not flourish in the interior of that Sate; at least evory effort which I

made while a resident in central New-York, and that I have made here has proved abortive. Is it because it is too tender for this climate? I think not: it seems to stand our winters tolerably well, and yet it does not flourish. It is exceedingly stinted in its growth even when protected in winter. It appears like another plant from the one that adorns the yards and gardens of New York and vicinity. Does it flourish in a higher latitude, for instance, in Boston or Albany? Does it flourish in any section of the country removed from the influence of the sea air. In case you, nor any of your correspondents can satisfy my inquiries, may be some of the eastern Agricultural Journals will condescend to enlighten the ignorance of a TYRO.

Live Fence.

A correspondent requests us to publish our opinion concerning the following method of making thorn fence, viz: "Dig the common wild thorn, and after cutting them off 18 inches from the roots, let them be set out in a straight line, two feet apart; let the ground about the roots be manured, and kept mellow for a year or two; then let there be an embankment thrown up as high as the limbs, by back-furrowing on each side. Would it not acquire compactness above the embankment?"

Remarks.—We believe the common wild thorn may be successfully used for hedges, and are glad to see attention directed to it—but we apprehend a hedge sufficiently compact to exclude the small animals that have to be fenced against, could not be made by planting the trees so far apart. The usual mode is to plant them at intervals of only five or six inches. We are not prepared to say what would be the effect of burying the roots so deep as would be done by back-furrowing in the way suggested, but should think from the analogy of other trees, that it would be injurious. We have on hand a valuable article on live fences which is reserved for publication in our next number. From that, if we mistake not, may be obtained, much information relative to the best method of procedure for those who are inclined to embark in this interesting experiment, and to that, we must beg leave to refer our correspondent.

In reference to the manufacture of maple sugar, we assure him we shall not forget to publish in due season the promised article on that subject.

New Grass Fields.

The grass seed that was well sown in August looks extremely well. We had timely rains in the latter part of that month and in September that brought up the blades strong and healthy. It is pleasing to note the progress of this new mode of stocking down lands to grass. Six years ago not one farmer in fifty would admit that it was good husbandry to turn over the green sward furrow and stock down at once without sowing grain with the grass seed. A great majority thought it absurd to lay the land to grass again without first tilling it two or three years to make it mellow.

One consequence of this erroneous notion was that low, flat, cold and wet grounds were suffered to lie dormant. They were not profitable or suitable for tillage, yet they are the best part of every farm for mowing grounds. But now we see these low lands bearing the richest crops of grass, and we get it without going through the costly process of tilling just for the sake of tilling; and we are now able to give every field a chance—we practice rotation, yet keep these low lands constantly in grass.

The grand effects of this new system of rotation are beginning to be evident to the farmers in all parts of New-England. When we lectured at the Cattle Show in Kennebec on the eighth instant, we alluded to this new mode of seeding. The clergyman who officiated on the occasion said to us afterwards that he had practiced sowing in this mode for three or four years, and thought it a great improvement.

In a large number of our towns you will find seed sown in this mode. When the practice becomes general, we have not the least doubt it will add one quarter to the quantity of English hay on all farms where such soils abound.—*Mass. Ploughman.*

Important, if true—Wounds on Cattle.—The most aggravated wounds of domestic animals are entirely cured with a portion of the yolk of eggs mixed in the spirits of turpentine; the part affected must be bathed several times with the mixture, when a perfect cure will be effected in forty-eight hours.—*Exchange Paper.*

This is really remarkable, especially as the magnitude of the wound seems to have no effect on the speediness of the cure. Forty-eight hours does the business in every case. Hard to swallow—but the application may be a good one, nevertheless, and we therefore insert the prescription for trial.

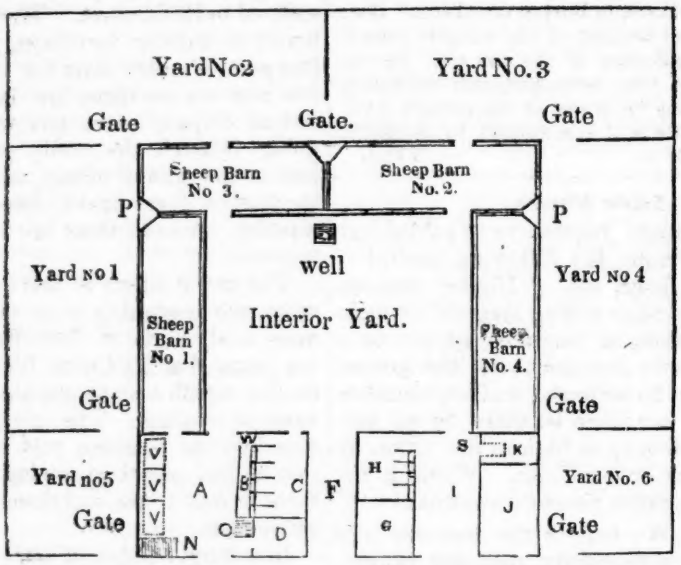
To prevent mice from destroying Fruit Trees in the Winter.—A correspondent of the Boston Cultivator says: "Apply boiled tar or pitch, when warm, to the trunk of the tree as high as it is liable to their depredations. I have found this to be a safe, sure, and cheap preventative, even in the most exposed situations beside stone walls."

A man that breaks his word bids others be false to him.

Owe no man any thing—if you can help it.

Plan of Barns.

The following plan and description of Farm Buildings, designed more especially for a wool-growing farmer, is taken from Morrell's American Shepherd, noticed in our last. It is one of three plans given in that excellent work, and that which appears to us to combine more advantages than any other, especially where the buildings are of necessity constructed on a level, affording no opportunity for an under-ground part—a case common in Michigan. The plan might be adapted to a larger or smaller scale, according to circumstances.



DESCRIPTION OF THE FIGURE.

BY RICHARD MORGAN, OF AURORA, CAYUGA CO. N. Y.

I have adopted the plan of bringing *all* of the buildings upon the farm into one compact body instead of being scattered promiscuously over the farm. You will discover that I have drawn four sheep-barns in connection with each other, a description of one of which will answer for all.—Sheep-barn No. 1 is a building *fifty feet* in length by *twenty* in width, with *fifteen* feet posts, the first room or sheep room to be six feet and a half in height from the bottom of the sill to the floor. A tight floor over head to keep out all dust and seed. The sheep to be on the ground, it being better than a floor of wood. A pen three feet high, and to contain a space equal to five or six feet square, to be placed as shown by the letter P on ground plan, for receiving the hay when pitched from the mow. A rack for grain, hay and roots, to extend entirely around the barn, excepting at the doors; one door opening into the interior yard, and one into the outer yard. The outer yard which the sheep are to go into for their daily exercise, extends around the barns on three sides, to be sub-divided into small yards for the accommodation of each flock; to be enclosed by a fence five or six feet high, close boarded; the division fences are each to have a gate near the barn for passing with a team, as the barns are to be filled with hay from that side; yards No. 1 and 4 thirty-five feet by fifty; Nos. 2 and 3 are thirty five by eigty-five feet. The mow is sufficient for twelve or fourteen tons of hay each. The sheds, if built all at a time, may be divided by a fence between flocks, and the mow be left all in one.

Each sheep barn gives room for one hundred sheep; fifteen inches of rack for each sheep; sufficient room to lie down in, without being too much crowded; the room should be well *ventilated* by funnels running up through the roof, or by windows near the upper floor, with blinds or slats. The barn I believe to be a good size for one hundred sheep, but those who are willing to add two or three feet more in width, in order to give an alley between the sides of the barn and racks, would find it convenient and profitable;—but with the size given, there would not be sufficient room. I will give you a description of the barn and carriage room attached. The barn, carriage-house, and stable, occupies thirty-five by one hundred feet; K, is a granary for oats; J. is a bay for oats in the sheaf; a cellar under both for roots, with stairs at S, to enter the cellar, to be closed by a trap door, to be hung with hinges; I, is threshing floor; G is a bay for hay; H, is a stable for four cows or oxen; a passage way leads from the stable into the barn floor; a small door opens out of the stable into the yard; a small door also, from the threshing floor, with large door in front for driving in with hay and grain; the whole occupies forty-four feet of the building; F, is a covered road-way into the yard, twelve feet in width; D, is a grain room for the horses; C, is the horse stable with five stalls, racks for hay and grain, &c., B, is an alley, for mixing feed, enclosed tight to keep dust and dirt out of the wagon-room; O, is stairs leading into the hay-mow; A, is carriage room, a deposite for farm implements, &c. A tight floor covers the carriage room and stable, leaving the room nine feet in the clear. At N, stairs lead into a room for *storing wool.* Let a room of sufficient size be partitioned off in the loft, and be made tight against rats, mice, and dust, lighted by a window

in the end of the barn. Let there be a window or door at each end of the mow, for filling the same with hay. When the sheep are to be shorn, let them be housed in sheep barn No. 1; let the wagon and tool room be cleared for the purpose, and be used for a shearing room; V, V, V, are tables, or leaves made smooth, and to be hung with hinges to the sides of the room near the floor, to be used for shearing upon, eight and a half feet wide; when not in use, to be fastened back against the side of the room, taking up but two inches of the room; the roller to place his table in such a place near the stairs, that he may throw the fleece, when tied up, directly into the wool loft; let there be a trap door in the wool loft for sacking the wool.—The sheep, when "fleeced," may be turned into the interior yard. If the barns cannot be supplied with water by pipes, let the well be dug as shown in the yard. Yard No. 5 would answer a good purpose for fowls, and yard No. 6 for the hog-pen, or if needed, erect a shelter, and keep the bucks safe from the other sheep, or such other purpose as may be most convenient. The interior yard is fifty by sixty feet, and may be used for young cattle. I should have given the height of the barn and carriage-house, which is eighteen feet posts. The expense of erecting one sheep barn, is about $150. The expense of erecting all of the buildings would be about eight or ten hundred dollars, depending entirely upon the price of lumber, and of labor.

From the N .E. Farmer

Great Yield of Corn Fodder.

NEW BEDFORD, SEPT. 30, 1845.

MR. BRECK—Dear Sir.—You requested me to give you an account of the product of a field of corn sown broadcast, that you saw when at this place last summer.

I will first state to you the condition of the land when I took possession of it in March 1842. There were 2 acres and about 32 rods: it was very full of rocks and small stones, and had been cropped by antique farming, until it would not produce provender sufficient in one year to feed a pair of sheep during that space of time; and such was its condition in July, 1844. At that time, I put it out to clear up and wall by contract; and my specifications provided that every stone that a plough would hit at the depth of ten inches below the surface, should be removed by men following the plough, with iron bars, and that the ground should be grubbed up to the walls to that depth. The contractor ploughed the land one foot deep, harrowed it twice with a heavy jointed harrow, picked up and carried off all the stones, and finished his work as per contract, and to my satisfaction about the middle of April. I then had the land ploughed across the old furrows by a heavy pair of oxen and one horse, followed by two pairs of oxen on a subsoil plough, that ran on an average of 16 inches deep, with men following with iron bars, to remove any stones hit by the subsoil plough. After thus ploughing, the ground was well harrowed by a heavy-jointed harrow, the teeth of which are 6½ inches long, and the stones all picked up and carted off. Thirty-five tons of manure were then put on to the acre, and uniformly spread. Said manure was the droppings of 20 head of cows and one horse, all well fed, and the manure was deposited in the barn-cellar, where all the liquid manure was received and well commingled by hogs. This manure was turned under about seven inches, and the ground again well harrowed, by the harrow alluded to, and the small stones picked up.

Ten bushels of white flat Maryland corn were then sown broadcast on the piece, and once harrowed as above, and stones again picked up. The cultivator was then run over the ground; it was then bushed with a heavy bush-harrow, and finished by rolling with a roller weighing 2730 lbs.

I find by a bill of labor, that the work was finished May 15th. One rod square was carefully measured, and cut where it was the smallest and weighed by a patent balance, 325 lbs. One rod square where it was of *middling* quality, weighed 390 lbs. One rod square where it was of *best* quality, weighed 450 lbs; giving an average of 388 lbs. to the rod, and 31 80-2000 tons to the acre.

The corn was cut in the morning by the scythe, and one load carted to a field in the afternoon, where it was eaten by the stock. A load was carried to a small lot near the barn, in the afternoon of the same day, and the stock were turned in the following morning after the cows were milked, where the fodder was eaten up clean. In this way it was all fed out green being a little wilted.

The product of two acres and about thirty-two rods, fed *twenty cows in milk, or in calf-dry*, one heifer over two years old, two stock bulls, grown, and five spring calves, for seven weeks five days. This was all the green food my stock had for that time, except what they could pick up from a pasture burned up, in which they had run during the season. In five days after feeding on corn fodder, my cows increased their milk one can full, or ten quarts. I did not test the quality of the milk by my lactometer,; but I presume it was equally as rich as from grass. I am a pretty good *living lactometer*, as I take about three tumblers-full of milk, as a substitute for tea, every day, and I pronounce it as rich from corn-fodder as from grass.

I am satisfied, most fully, that the corn-fodder taken from 2 32-160 acres, was equal to 15 tons of the very best English hay.

Excuse this tax on your patience, and believe me, dear sir,

Your ob't serv't,

GEO. RANDALL.

TO CURE A STIFLED HORSE IN TWO HOURS TIME—Take one gallon of urine and put therein a handful of junk tobacco, boil down to one quart; then add two ounces of oil of spike, one ounce of oil of amber, two spoonsful of spirits of turpentine, and two spoonsful of honey, put into a jug and cork it tight for use.

Process of Application.—Rub the stifle bone hard with the mixture fifteen or twenty minutes; then dry it in thoroughly with a red-hot fire shovel, then ride the horse back and forth one hundred rods. Repeat the above two or three times and the cure will be effected.—*Alb. Cult.*

J. P. GODDARD.

Miscellaneous Notes.

We find so much complaint of the inconvenient operation of the new Post Office Law, that we have concluded to authorize all monies to be sent henceforth directly to us in letters, at our risk, (proof being had that they were actually mailed,)—and, when in bills, at our risk also. This is more than is customary with publishers, and is surely all that any one can ask.

CORRECTION.—A typographical error occurred in the communication of our valued correspondent, "A Horticulturist," published in our October number, by which he is made to recommend that young orchards should not be stocked down in less than *two* years after planting. It should have been *twenty*.

THE FARMER'S LIBRARY.—The November number of this valuable work has come to hand, containing a continuation of Thaer's Principles of Agriculture, together with the usual miscellany in the Journal. We wish this publication were extensively patronized by farmers who are able to afford the expense, and would especially recommend it for School District and Township libraries. It is got up by the publishers, Greely and McElrath, in the neatest style of execution, with elegant and costly embellishments; while the fact that its editor is John S. Skinner, the father of agricultural literature in the United States, is proof enough that the matter is of the right stamp. Published in monthly numbers of about 100 pages each, at $5 a year: five copies for $20, See advertisement in our October number.

THE SCIENTIFIC AMERICAN.—This is a weekly publication in newspaper form, just published in New York city, devoted to discoveries and improvements in the arts and sciences. It is well edited, and is an interesting and useful publication;—especially for mechanics. Terms $2 a year, payable one half in advance, the remainder within six months.

THE PROVISION MARKET.—The advices from Europe within the past month have been of the most important character, as affecting the price of the great staple of this State.—While it is to be lamented that the partial loss of two great crops is likely to bring the miseries of starvation to the crowded millions of Europe, we cannot but anticipate with pleasure the happy effect upon the prosperity of our farmers, which will ensue from the obtainment of a liberal price for an abundant crop.

The wheat crop of Great-Britain, it is now settled, falls far short of an average one—but far the greatest loss is from the potato rot.—If the amount of loss is not exaggerated, the effect cannot be other than to cause a great rise in the price of all kinds of provisions, and as a friend to the farmer, we would advise all who can, to keep what they have on hand for the spring market.

The turnip in England is threatened with a distemper like the potato plague.

SCAB IN SHEEP.—Mr. Roby, a gentleman who keeps a flock of several thousand sheep in this county, informs us that the long known disease among sheep, called the scab, may be cured by the following simple and cheap method:

Salt them frequently, and mix with the salt a quantity of sulphur, and if that does not effectually cure, rub some of the sulphur on the denuded body of the sheep, and repeat it until they become healthy.—*Kal. Gazette.*

☞ A correspondent of the Cultivator, describing the symptoms of this disease, says: "On the infected part, the color of the wool becomes changed, and is easily noticed; if the disease breaks out on the head or shoulders or along the back, which is almost always the case, the sheep is constantly throwiug up its head and bending its back, as it were to ease itself by that position; if a blotch appears on any part of the body where it can turn its head to, it takes the wool in its mouth, and endeavors to pull it out. When any of these symptoms occur, the sheep is certainly more or less diseased, and should be immediately taken and examined. The shepherd should always have by him a strong decoction of tobacco, into which should be put salt in the proportion of 1½ bushels to forty gallons; the older this tobacco water, as it is called, the better, so as it loses none of its strength.—The shepherd should have a quart bottle, into which to put his tobacco-water, stopped with a cork, through which a quill is put, similar to those bottles from which bitters are served at coffee-houses. If the skin is not very thick and hard, and will yield to the finger and thumb when squeezed, all that is necessary is to divide the wool over the infected part, and from the bottle, through the quill, to pour the tobacco-water, and rub it, or rather scratch it well in with the nail of the finger; if the skin is very thick and will not yield to the squeezing of the finger and thumb, you must take the small blade of your penknife and puncture the skin closely all over the infected part, to the depth of one-eighth of an inch, then put on your tobacco-water, and rub it as before well in with the nail. One such dressing is generally sufficient, but it may be that a second light dressing may sometimes be required."

FALL-PLOWING FOR OATS.—An experienced farmer suggests that it is advantageous to fall-plow for oats, turning over the land well in the fall, and sowing the oats in the spring, harrowing them both ways well, without plow-

ing in the spring. He says one of his neighbors has tried it, and finds it works well even on sandy soil. Of course it must do well on clay.

INQUIRY.—A correspondent in Kalamazoo writes: "I wish to inquire, through the medium of your paper, if there have been any of the marshes cultivated in grain; if so, with what success?"

Will some one, having the information answer.

PROLIFIC WHEAT.—Six heads of wheat were found in a field of White Flint Wheat, all from one kernel which produced on being shelled 623 kernels. It was black chaff bearded, and grew in the field of J. N. Riley, of Three Riv. St. Jo, Co. M.

The Potato Malady.

This destructive disease has extended itself, the past season, to several states and countries before unvisited, and the injury done has been far greater than in any previous year. In the north-eastern part of New England, which had heretofore sustained less loss than other portions, it has this season prevailed with greater violence. Scarcely a field that is not more or less rotted. The infection has crossed the Atlantic, and made sad havoc in Great Britain and Ireland, France and several countries on the continent. The destruction of a species of food, which forms the principal article of subsistence of vast numbers among the poorer classes of those countries, must be followed by the most lamentable consequences.

The investigations, that have been made the past season, appear to have resulted in strengthening the opinion that the disease is owing to a species of fungus, growing upon the vines. Insects, indeed, there are upon the diseased stalks and tubers—but their presence, it is believed, always follows, not precedes, the appearance of disease. On the contrary, observers say they find the fungus *(Botrytis infestans)* in every case preceding the work of destruction. It appears while the leaves are yet green, or yellowish green, and the parts attacked soon become brown and withered. An English writer says: "The appearances exhibited by some smooth Ash-top potatoes in my garden, convince me that the spots upon the tubers arise from tho attack of the mould, and that the mould is *not* an after organization. In re-examining specimens, in which there was no external appearance of mould, I found the spawn (of fungus) very evident in the diseased cells, but the grains of starch sound and unaffected. If the infected tubers are shut up for a day in a tin box, the mould appears externally in little white patches, and soon fructifies."

A professor of Agriculture and Rural Economy in the University of Liege, Cha's Morren, particularly describes the fungus, after having closely studied its whole action. "It is of an extreme tenuity, but re-produces in an incredible measure. Its trunk is composrd of several erect, jointed fibres, bearing at their summits one or more branches, always double, and at the ends of which appear the reproductive bodies, in the form of an egg, but which do not really exceed in diameter the hundredth part of a millimetre, or the 392,-700th part of an inch."

"These observations would seem to establish the vegetable origin of the disease; but it is still the opinion of some of no mean authority, that it originates "from some subtle agency or influence, probably atmospheric, operating as the causes of other epidemics do, defying human investigation and scrutiny, and, like them, passing away with as little apparent cause as they came."

If a fungus be the cause, it would be expected that on the sea-coast within reach of the salt spray, the disease would not prevail. It would further be inferred that dressings of lime and salt, applied to the seed or soil, would be beneficial, and that boiling diseased potatoes in salt and water would remove the infection. On all these points, the facts are found in the main, to correspond—though it must be confessed not without some discrepancies.

The grains of starch remaining perfect some time after the commencement of disease, potatoes, partially affected, are found to produce good potato flour. Hence, in those countries where the preservation of whatever will serve for food is of vital importance, this circumstance is taken advantage of, the potatoes being grated and worked up into starch, which is afterwarks mixed with flour and made into bread, or kept for future use.

Michigan has hitherto escaped nearly uninjured—but the present year the disease has prevailed with some virulence in certain neighborhoods in this and one or two adjoining counties. We have not heard of its appearance in other parts of the State.

We should recommend those who have diseased potatoes, to feed them out as fast as they become affected, first boiling in a weak brine. Those who have stored away potatoes apparently sound, taken from a field where the disease existed, will be likely, after a while, to find the rot which was latent at the time of digging, beginning to show itself. When once begun, the infection will spread, unless some measure of prevention be used, through the whole pile. To prevent this, any alkaline substance would be of service,—as lime or ashes. If this were our case, we should try intermixing dry ashes with the potatoes, or

wetting them thoroughly with brine or an alkaline solution. It is said that potatoes, merely spread out and dried on a floor for two or three days, have passed uninjured, while others of the same lot, barrelled as soon as dug, have totally rotted.

☞Since writing the above, the N. E. Farmer has come to hand containing many accounts of fields of potatoes close on the shore of the sea, and some in which sea-weed was used as manure, which nevertheless did not escape the rot, but were quite as badly effected as those in the interior:—so, on this point, we are set adrift again.

The Soil of Marsh-meadows.

Every one has remarked that the soil of marshes, for a depth of from eighteen inches to two feet is composed of nearly pure vegetable mold, having in it very little admixture of clay, sand, or other earthy constituents, and of a blackness that rivals charcoal itself. It is a common impression that these soils are made by the washing in of upland soil, century after century, and to a very limited extent they doubtless are. But this, we think, does not account either for the *amount* of the accumulation, or for its peculiar character: for if that were its only or principal source, more of the ingredients of the upland soil would have accompanied the vegetable mold in its descent, and the soil of these receptacles would have resembled that found in the bottom ot those dry hollows, which are so commonly met with among the oak-openings of this State.

There can be no doubt that the marshes were once covered with water, and that, too, at no distant period. Indeed, within the memory of early settlers, some that were covered with water a foot or two in depth, have become dry enough to be mown. The comparative wetness or dryness of the season, of course, makes much difference—but taking this into due account, it is evident there is going on a gradual drying up of the super-incumbent waters, and an emerging of the land.

This being the case, a knowledge of the process which takes place, when decomposition of vegetable matter occurs, *under water*, will account for the peculiar characteristics of marsh soils.

In the burning of a coal-pit the air is excluded more or less completely, by a covering of straw and earth, and the result is that instead of ashes being the product, as is the case when combustion takes place in the open air, charcoal is formed, the carbon of the wood remaining unconsumed. Now a process analogous to this occurs in the gradual decomposition of vegetable matter where the air is excluded—for decomposition is only a slow combustion. Aquatic plants annually leave their remains in the water, where they decompose without access of air. In the process certain gases are thrown off, which probably are the means of giving to the climate of the country where extensive tracts of that description are found, its peculiar character, and, in the end, there is left behind a black deposit in the bottom, which is, in fact, the charcoal of the plants.

The following extract from Petzholdt's Agricultural Chemistry confirms these views:

"Carbonization, then is characterized and distinguished from ordinary combustion by its products differing from those of combustion, in consequence of the exclusion of atmospheric oxygen. Nevertheless it has much in common with combustion, where the latter process goes on with the presence of only an insufficient amount of oxygen, especially in leaving a carbonaceous residue, which in carbonization is called charcoal, and in combustion, soot.

"Now let us imagine vegetable fibre undergoing spontaneously the slow process of decomposition under circumstances which exclude completely the oxygen of the atmosphere, and it must be evident that the phenomena occurring will be essentially the same as in carbonization. Compounds of hydrogen and carbon will be formed principally, together with small quantities of water and carbonic acid, and a carbonaceous substance will remain, approaching more or less to pure carbon, just as is the case in carbonization. I need only remind you of what takes place in marshes and in pools of stagnant water, at the bottom of which is a number of vegetable matters, consisting chiefly of vegetable fibre, putrefy under cover of water, which completely precludes the access of atmospheric oxygen. Bubbles of water are seen constantly ascending from the bottom of these marshes or pools; these bubbles will, upon examination, be found to consist of carbonic acid, or carburetted hydrogen gas, which are the gaseous products of the decomposition of plants by the process of putrefaction. And if you examine the mud of pools and marshes you invariably meet with a black carbonaceous substance; this is the other product of decomposition, corresponding to the charcoal remaining after the completion of the process of charcoal burning."

Price of corn in Illinois—The editor of the Chicago Journal, who has been travelling in several counties in Illinois, says that any quantity of corn could be obtained for five or six cents per bushel.—*Sci. Am.*

Domestic Economy.

For the Michigan Farmer.

A Substitute for Apples in making Mince Pies.

The season for *mince pies*, has at length arrived. Let no lover of them despair of the enjoyment of them for the want of green apples, and for the reason that a good ripe pumpkin makes so good a substitute for them, as to make it extremely difficult for any one to discover by the *taste*, that apples were not actually used. The pumpkin should be cut or chopped up *raw* with the meat, and so put into the pie, and the "fixins" be the same as when apples are used.

Another Mode of Curing Hams.

Mr. Editor.—In the last Dec. No. of the Cultivator, page 374, were published certain directions for curing meat, which I consider worth double the subscription price to any person who wishes to cure and preserve meat for family use. The directions there given for curing hams, I have followed out to the very letter, (with the single exception of suspending them with their shanks downwards while smoking,) and the result is, that more delicious ham than I now have, I never tasted. I had followed a course of my own, which was almost invariably the same till last year, but the mode recommended by you is so far superior to it, that no slight cause will ever induce me to be indifferent in regard to the method of curing my hams. I cheerfully bear this testimony to the value of your receipt, knowing that those of your readers who choose to follow it will be amply repaid for the slight sacrifice of time and trouble, consequent upon doing so.

A Subscriber.

Hoosick Falls, N. Y., 1845.

At the request of several correspondents, we here republish the recepit for curing hams above aluded to. We have practiced according to this mode for several years and have found it superior to any other with which we have been acquainted.

For every one hundred pounds of meat, take five pints of good molasses, (or five pounds brown sugar,) five ounces saltpetre, and eight pounds rock salt—add three gallons of water, and boil the ingredients over a gentle fire, skimming off the froth as it rises,continuing the boiling till the salt, &c., is dissolved. Have the hams nicely cut and trimmed, packed in casks with the shank end down, as the pickle will thus strike in better. When the pickle prepared as above is sufficiently cool, pour it over the hams. They may lie in the pickle from two to six weeks, according to the size of the pieces, or the state of the weather—more time being required in cold than in warm weather. Beef or mutton hams, or tongues intended for smoking and drying, may be cured according to this mode, and will be found excellent.—*Alb. Cul.*

To scour Clothes, Coats, Pelisses, &c.—If a black, blue or brown coat, dry two ounces of fuller's earth, and pour on it sufficient boiling water to dissolve it, and plaster with it the spots of grease; take a pennyworth of bullock's gall, mix with it half a pint of stale urine and a little boiling water; with a hard brush dipped in this liquor, brush spotted places. Then dip the coat in a bucket of cold spring water. When nearly dry, lay the nap right and pass a drop of oil of olives over the brush to finish it.

If gray, drab, fawns, or maroons, cut yellow soap into thin slices, and pour water upon it to moisten it. Rub the greasy and dirty spots of the coat. Let it dry a little, and then brush it with warm water, repeating, if necessary, as at first, and use water a little hotter: rinse several times in warm water, and finish as before.—*Ex. Paper.*

Windows Cleansed by Steam.—A very simple method of cleaning windows is now coming into general use in England. The window is first dusted with a bunch of feathers or dusting brush, and when the dust is thoroughly removed, place a bowl of boiling hot water at the base of the window; the steam immediately covers the glass, which is removed by a wash-leather, and finished off with another quite clean and dry. The method saves time, prevents that cloudy appearance left by whiting, and produces a more brilliant and durable polish than any other.

Curing Pork—A new method.—Two correspondents of the Albany Cultivator recommend a new method of curing pork, and attest to its merits from their own repeated experience. This is to pack it, when the animal heat is exhausted with rock salt, *and pour on the brine boiling hot.* The pickle for hams is heated and applied in the same way. By this method the brine is said to penetrate at once equally, to take from the meat all stringy and tough qualities, render it brittle, add much to its flavor, and be withal, the safest method. One of these writers says it is almost universally practiced in his neighborhood.—Who will try it? The rock salt could not easily be procured here, but this, probably, is not indispensable.

Curing beef.—A farmer at the west says: "I have used *Saleratus* in place of *saltpetre*, and I never had better beef.—*Balt. Sun.*

Panes of Glass may be easily removed by the application of soft soap for a few hours, however hard the putty has become.

Cheap Ice House, or good Cellar for Roots.

My worthy friend:—You ask for more communications. Now the fact is that my name has become so common in agricultural papers, that I have reason to believe that something new from some new writer, would be much more interesting to readers, and that when they see my name, they will exclaim, "What, Monsieur Tonson come again;" and pass over this hackneyed name with the well-founded belief that no new thing can come from such un old fountain. But I will once more run the risk.

Many persons are deterred from putting up ice

because they cannot afford to build an ice-house. If they will try the following plan, which by the way is not original, but has been used in days of "auld lang syne," "down in old Virginia," and proved to be a good thing, they need not be afraid of the expense.

Select a spot upon rising ground where the surface water will run off, and strike a circle 12 feet across and set a circle of strong stakes about 5 feet high, and one foot apart, saw off the upper ends even and square—set another circle of stakes 4 feet distant all around, the same height, but they need not be quite so close to each other—leave a space on one side for a door way, and set stakes or nail boards on each side so as to make a passage to the inside space—put strips across the inside space from the tops of the stakes, sufficiently strong to hold up a stack of hay.

Now take prairie hay, or some of the super-abundant straw that all western farmers waste or burn up, "to get it out of the way," and tramp the space between the stakes full and as tight as possible, taking care to raise it a foot or two above the top of the stakes, then make a complete round stack that will shed water, tapered from the outside stakes to the centre. To make a ventillation, nail four boards about 5 or 6 inches wide together; let two of them be one foot the longest, and set this box up as a stack pole, and nail a cap on the top of the two longest pieces. If this gives too much ventilation stuff straw in one end. Hang two tight doors, made to shut upon woolen listing.

The "hay stack ice house," that any farmer can make in two days, will keep ice two years. Of course the size may be varied. The ice should not be laid upon the ground, but upon some rails covered with straw, or a bed of straw would be better—a slight ditch should be dug around outside to drain off the water that drips down. With slight repairs it will last years.

Now, besides being a good ice house, it would make one of the cheapest and best winter storehouses for turnips, &c., convenient to the cattle yard, that can be contrived when the soil will not admit of making cellars under our buildings. And in all damp climates cellars under dwellings are a positive nuisance—complete hot beds of pestilential miasma.

There is one more purpose for which the fabric may be used. Cobbet, who deprecated the use of ice, in speaking of an ice house in his "Cottage Economy," says if you are tired of it, for that purpose, it would make one of the finest nests for young pigs in the winter, that could be contrived.—*Cor. of Union Agriculturist.*

WORKING ABOUT RIGHT.—The progress of improvement cannot fail to equalize the conditions of mankind, whatever its opponents may say to the contrary. The English farmers now complain that they cannot hire laborers so cheap as formerly, and the consequence must be a reduction of the rents, while the facilities of carrying their produce to market are still increasing. The rich landlords begin to find themselves more dependent on the laboring classes, than they have been hitherto, willing to admit..—*Sci. Amer.*

☞ Fools and obstinate people make lawyers rich.

Prof. Johnston's Lecture.

We give below to our readers, a Lecture by Prof. Johnston, the eminent agricultural chemist of England, to a Convention of teachers, in which are explained so clearly some of the fundamental principles of chemistry applied to agriculture that they may be readily understood by all. We wish it may be read attentively, by those who have never studied this most useful science, and that it may excite a desire to learn of it something farther. The Professor recommends the introduction of this study into schools.

On Saturday, according to promise, Mr. Johnston delivered a second lecture in the same place, Mr. Taylor, of Duddingston School, occupying the chair.

Gentlemen—at the close of my address to you yesterday, I told you that I thought that what I said would not possess the same weight, or appear to have the same importance to you as to the practical agriculturist, and that you could not by any means feel the like interest that I feel, because in all probability most of you are unacquainted with the way in which agricultural chemistry bears upon, and is advantageous to, the practical agriculturist of the country. It was for that reason that I offered to give you an exposition of most of the important points in the science—to give you a short sketch, a sort of bird's-eye view of that interesting branch of knowledge, to induce you to teach which, I presented to you so many considerations yesterday; and I am confident that when you have formed an idea of the subject, you will find it most interesting, and one which will yield you great satisfaction and pleasure to become acquainted with. Gentlemen, there was a time when this hill upon which we now stand was nothing but a naked rock of lava. That old lava gradually decayed as modern lavas do, and crumbled down and formed loose matter on the surface, in which seeds of plants grew, died, and left their remains. Thus by degrees the soil accumulated to such as you now see on the surface of this rock, on which plants now grow. Such is the history of nearly all the soils on the surface of the globe.

Suppose you take a portion of any one soil and put it upon the end of a piece of metal, such as I am doing just now, and in any way expose it to the action of the fire, you will see that part of the soil will grow blacker at the edges; by and bye that blackness will disappear, and the soil will assume a color more or less dark, according to the nature of the substances of which that which remains consists. If you take this portion of the soil before it is heated and weigh it, you will find that after it is exposed to the fire it is not so heavy as before. That portion of the soil which has burned away consists of the remains of those vegetables of which I have spoken; of those animals who have died and been deposited in the soil; and of the manures which have been applied by the farmer. Thus vegetable matter forms what is called the organic, and the other portion of the soil the inorganic matter. The quantity of organic matter varies very much—in some soils it exists to the extent of two per cent., in others 15 and 20 per cent., and in peaty soils sometimes as high as 70 per cent. If you take a piece of vegetable matter and burn it, such as this wood

you will find here, also, that a large portion will not burn away, but remains, forming wood-ash.—It is the same, then, with regard to the plant as to soil—a part burns away and a part remains. If you look at the tables you will see that different plants have different proportions of inorganic matter—thus, meadow hay leaves nine or ten per cent. of incombustible matter.

Again, as to the animal substances, take a piece of muscle, dry and burn it, and you shall find that the greater part of it will burn away, which is the organic matter, the remainder being, as in the soil and in the plant, the inorganic and incombustible matter. Now, one hundred pounds of fresh muscles contain phosphate of lime and other saline substances to the extent of one per cent. of incombustible matter. Thus, the three different substances soil, vegetable and animal matter, consist of organic and inorganic matter; but there is this difference, that in the soil there is a larger portion of inorganic matter than in the plants and animals—in the latter, the greater portion burns away.

I call your attention now to the inorganic portion of the soil. By looking at the table you will observe that the inorganic matter consists of different substances, such as silica, which forms a very large proportion of flint; alumina, a substance which forms a large proportion of pipe-clay; oxide of iron, which is the rust of iron; potash, of which the potash you get from the shops may serve to give you an idea; chlorine, which is a kind of air; and then there is manganese, phosphoric acid, and carbonic acid. These substances are found in all soils, but not in equal proportions. You will see in the table before you, the details of the constitution of a soil which would yield good crops for perhaps an hundred years. Were you to possess such a rich soil as that, and such soils are to be got in the virgin land at the Cape of Good Hope, on the banks of the Ganges and the Mississippi, you would always find that it would contain a notable quantity of all these different elements. In the second column of the table you have a list of the quantities of the different substances of a soil capable of yielding good crops, but which would require to be regularly manured. You will observe that opposite three of the substances, the word "trace" is put, which means, that though the substance was not absent altogether, yet it existed in so small a quantity that it could not be weighed. In the rich virgin soil first stated, you observe that there is of lime 59 per cent., while in the second column there is only 19. Of phosphoric acid, there is four in the one, and only two in the other. In the third column of the table is the constitution of a soil so barren, that though manured, it could not produce a good crop. You see that there are a great many gaps in the list; in short, there is only five substances which exist in anything like quantity.

So much for the substances which exist in all good soils; and you may be sure that if any soil does not produce a good crop, some one or other of these substances are wanting. The question then arises, how do soils come to have such different compositions as these? I stated to you how the crumbling down of rocks formed the soil along with the accumulation of organic matter in it; and if I had had time, I would have directed you to a geological map, and shown that in every country the rock on which the soil rests is different; and if it be true that the crumbling down of rocks forms the soil, you learn at once how soils must differ very much in their composition. In feldspar soils, of which rocks principally consist, you will observe only silicia, alumina and a few others. A soil formed from this must therefore contain a large quantity of these substances which are on all soils, while it would be deficient in many others. As soils differ in this way, we are led to this practical question: how can we make this soil to be like that soil, or how can a bad soil be made equal to a good one? This answer is simply, that you must supply those substances which are wanting in the soil—you must apply as much potash or lime as is wanting in the third or poor soil, and as much lime and phosporic acid as is wanting in the second, to make up all the constituent elements which exist in the first, or rich virgin soil, and which are necessary to enable the soil to produce a good and profitable crop. This shows you the benefit of an analysis of the soil, by which a farmer is enabled to decide what the soil requires, and proceed accordingly.

I shall next speak of vegetable substances; and first, as to the inorganic part of them. If you take the ash which remains behind, when a plant has been exposed to the fire, and analyze it in the same way as with the soil, you will come to this result, that the inorganic part of the plant contains precisely the same substances as the inorganic portion of the soil. In the table on my right hand, you see the composition of a 1000 pounds of hay. The different kinds of hay have different quantities of the same substance, which substance is the same as in the soil. In reference to the ash of vegetables, 100 lbs. of wood would leave behind not more than half a pound of ash. Perhaps you may be inclined to ask why, seeing that out of 100 lbs. one half pound only is ash, can that half pound be necessary for the existence of the plant, or is it rather merely accidental, and in no respect making any difference to the plant? No such thing, gentlemen. That half pound of ash is just as much an essential part of the plant, as the 99½ pounds which burned away. The same is the case with wheat, which leaves 2 lbs. of ash. I state these facts in order to bring you along with me in my exposition of the principles of the science, that you may see how I come to the conclusion, and which must be true, that the plant could not live, that it could not fulfil the purposes of nature, unless it contained this small quantity of inorganic matter. If you look to the table on the ash of hay, you will find there is an analogy between it and the soil. Red clover contains in one thousand pounds thirty-one pounds of potash; rye grass as little as nine pounds. Of phosphoric acid, rye grass contains one-third of a pound, red clover less than 7 lbs., white contains five, and lucrene thirteen lbs. We learn, then, that these substances are present in different proportions in the ash of different kinds of hay, and from that we draw several important practical deductions. Let us inquire whence do the plants derive the organic and inorganic parts of which they consist? They derive the organic partly from the soil and partly from the air; the inorganic solely from the soil. In the air, float certain proportions

of all those substances which enter into the organic part of the plant. Now, the different kinds of plants in the soil will materially affect its constitution, and have a remarkable influence upon that constitution. Suppose I grow lucerne upon the very fertile soil detailed in the table: as the lucerne takes out a large quantity of lime and of phosphoric acid, you will see that the crop would rob the soil of a large proportion of lime and of phosphoric acid, and that therefore it would not grow the same crop with that luxuriance which characterized it at first, because it conld not supply with the same ease and abundance those peculiar substances upon which lucerne lives more than upon any other. Take the ash of the different kinds of grain, and you will find that each in its own way, affects the soil. Wheat, oats and rye, require a large quantity of phosphoric acid, and so if you grow wheat a long time in the same soil, it will draw out this phosphoric acid among other things, and thereby reduce its quantity.—This is what is mean by exhausting the soil. If rye grass is the plant used, it will exhaust the soil generally, because it does not take away a great portion of any one of the substances. In the same way different crops make the soil poor; but if I take the same crop, say fifteen or twenty times, a practice which, as is well known to the most of you, existed not many years ago, it would by that time produce no crop at all.

(*To be Continued.*)

Efficacy of Ammonia in cases of Poison.

Extract of a letter from Dr. Church to the Editor of Silliman's Journal of Science, dated Cooperstown, N. Y., February 6th 1829.

A young man in this place had accidentally overset a hive of bees, and before he could escape, they had settled in numbers on different parts of his body and limbs and stung him severely. It was about half an hour after the accident happened, when he came to my office in great agony, and he had scarcely time to give an account of it before he fainted. I immediately applied the ammonia to the parts that had been stung, his legs, arms and breast. He directly recovered from his faintness, and experienced no pain or other inconvenience afterwards.

It is several years since I first applied the aqua ammonia, to counteract the effect of the bites of insects and the stings of bees, and it has invariably produced instant relief—generally complete. I have often seen children crying in excessive pain from the sting of a bee, and on application of the ammonia they would immediately cease complaining, and become cheerful, so complete and sudden is the relief it produces. I always use it for musquito bites, and they never trouble me farther. I was led to use it in these cases, from the instantaneous effect it was said to have in counteracting the operation of prussic acid. In the second number of the American Journal of Medical Science, (Philadelphia,) for the last year, it will be seen that Dr. Moore, of Alabama, used it with great success in the cure of bites of venemous serpents. From his account, it is probable that the pure uncarbonated aqua ammonia is most efficacious. I have sometimes noticed a difference, and think it must be on account of its being sometimes carbonated, and at others not.

N. Y. Farmers' Club.

[We extract the following from the conversation at the meeting of the Club on the 4th inst., as reported in the N. Y. Farmer and Mechanic:]

Gen. Chandler.—I present to the Club cranberry plants, some with their great crop of fruit on, at the request of Mr. Sullivan Bates, of Bellingham, Mass. A few years ago he first exhibited this fruit, produced by his new method—transplanting from low grounds to high. His success has been complete: he has gathered from one acre, about 400 bushels of cranberries in a season! He plants them in drills, 20 inches apart; in hills, 7 inches. The soil must be such a one as does not bake.

Chairman.—I took from swamps on Gen. Johnson's place, some cranberry plants and planted them on ground 80 or 100 feet above the swamp, ; they thrived and their fruit was so close together that one could hardly put a finger in without touching the cranberries. It is a highly profitable crop. I am of opinion that five hundred dollars might be obtained for a full crop of one acre.

Gen. Chandler.—Mr. Bates will furnish any number of plants to those who desire it.

Mr. Worth.—The cranberry of Russia is larger than that of England, but both of them are scarcely half the size of these cranberries, and of much inferior flavor. Those exhibited here would suit the English and continental markets, and would be sold to any extent.

Chairman.—I planted mine in loamy soil—prepared the earth well about the plants; watered them well—and did not lose ten out of the one hundred and fifty plants.

Gen. Chandler.—And those which I set out last spring, lived and flourished.

Mr. Wakeman.—My family have tried Mr. Bates' cranberries, and found them excellent.—They are larger tnan other cranberries.

Dr. Underhill.—The cranberry probably improves in *all* respects by the transfer from marsh to upland. Wild grapes love alluvial wet positions, but their flavor is not to be compared with those growing in dry soils. The wild grape has a thick skin, hard pulp, large seeds. By culture in dry situations, the skin and seeds become one-half less thick and large, and the pulp almost disappears.

To extract oil or grease spots from carpets or clothes.—The following recipe which we pick up in an exchange, is old, but may be new to some. "Cover over the spot with whiting, and let it remain until it becomes saturated with grease, then scrape it off, and cover it with another coat of whiting; and if it does not entirely remove the grease, repeat the application. Three coats of whiting, will, in most cases, remove the spot, when it should be brushed off with a clothes' brush."

When molasses is used in cooking, it is a prodigious improvement to boil and skim it before you use it. It takes out the unpleasant raw taste, and makes it almost as good as sugar.

Analysis of Soils.

For the purpose of determining the proportions of the principal earths and organic matter there is in a soil, we have found the following course, which is the same in substance as that recommended by Professor Johnson in his essays, for a rough analysis, to be sufficiently accurate, and more easily performed than any other. Nothing is requisite for its performance, but a set of common druggist's scales with grain weights; a capsule of Platina for burning the earth, (or a piece of sheet iron, or even an iron spoon, where the platina is not at hand,) and a small quantity of muriatic acid, with a common tumbler or two.—Select the soil to be experimented upon, in such a manner that it may be a fair sample of that of which you wish to ascertain the constituents. By drying it in the air, making it fine, and passing some of it through a not very fine sieve a quantity for examining is obtained.

Take of the soil so provided one hundred grains, spread it in a thin layer on white paper and place in an oven, the heat of which should be raised till the paper begins to be slightly discolored. An hour or two should be employed in this process. Take from the paper and weigh; the loss will be the water driven off. Take one hundred grains dried as above, and place them on a platina capsule or some untinned clean iron, and heat the earth to a dull redness, over a spirit lamp or a charcoal fire. Take from the iron when cool and weigh. This will show the amount of organic matter burned out, or the per cent. in the soil.

Take one hundred grains of the dried soil and mix it thoroughly with half a pint of cold water. To this add a large table-spoonful, or half a wine-glass of muriatic acid, and stir the mixture frequently. It may stand over night to settle; pour off the liquid in the morning, and fill the vessel with water, to wash off the excess of acid. When the water is clear, pour it off carefully, dry the soil and weigh it. The loss will show the per cent. of lime in the soil, and although not rigorously accurate, will be sufficiently so for ordinary purposes.

To determine the quantity of sand in the soil, and by its separation, the amount of clay also, it is better to take as much as two hundred grains, and this should be from the undried mass. The two hundred grains may be boiled in water, as that will incorporate the soil more fully with the fluid, and then poured into a glass, where the sand will soon subside to the bottom. When the clay begins to settle, the water must be turned off, and the sand collected and weighed. This will show the per cent of sand, and the remainder will be the clay, or nearly so. Sometimes the sand will contain considerable quantities of lime. When this is suspected to be the case, it may, after separation, be treated with muriatic acid, and the remainder will be silicious sand alone. In determining the quantity of lime, the glass should not be filled, as where the effervescence is active on the addition of the muriatic acid, a part of the material may be lost and the result be consequently erroneous.

By the simple process we have here described, any farmer who choses may determine the general character of his farm, or any part of it.—*W. Gaylord.*

Gleanings from the Agricultural Journals.

A simple rule for finding the length of the day and night.—Double the time of the sun's rising, which gives the length of the night, and double the time of setting, which gives the length of the day.

The richest Prairie soil may be exhausted.—Fort Harrison Prairie, one of the richest and most beautiful in Indiana, has been under cultivation some 25 or 30 years. At first, crops of wheat were produced of 40 bushels to the acre and corn corresponding. Now twelve or fifteen bushels of wheat, and thirty of corn is the usual product. In some instances corn has been raised there 20 years without cessation and without manuring. The result has proved that such soils are not an exception to the general rule, but that notwithstanding their exuberant richness, they may be *run out*—may be robbed of their productive properties, by constant cropping, without manure. These facts are stated in an Agricultural address, by one of the oldest settlers on the prairie, Geo. Hussey, Esq. If those now in possession of the unexhausted rich lands of this State shall take warning by this, and not presume that their soils are inexhaustible, they may easily and even with more *present* profit, so manage that there shall never be any falling off.

The Seeds of Sunflowers have been found to render chickens not only fat, but the flesh is also rendered tender and juicy.—*Sci. A.* [It is also well known to be excellent to make hens lay.]

Saving Liquid Manure.—The N. E. Farmer, describing Mr. Webster's farm at Marshfield, says: "There is no cellar under the barns, but Mr. Webster has hit upon a method to save every drop of liquid manure, and in the best possible way. The planks, composing the floors of the cattle's quarters, or byre, as the Scotch call it, are laid with an opening between them of about half an inch,

and so arranged as to be easily taken up.—The idea is, to place about two feet of loam or other earth, [marsh-muck would be best,] under the floor; this will absorb all the liquid part of the manure as it runs down through the openings, and in the spring will be converted into tne finest manure, when it is to be removed and replaced by fine mould."

Bots—their cause and cure.—A writer in the Boston Cultivator is of opinion, that the insects, found in the stomach of the horse, are not the primary cause of his disease, but the presence of the grub, is owing to the horse being previously in a sickly condition. He affirms that a sickly horse will be found with a hundred times as many eggs of the bot-fly, (*Œstrus equi*) upon his legs and other parts of the body which he can reach with his tongue, as a well one; and argues that the instinct of the fly teaches her to deposit her eggs where, when hatched, they will find the most suitable nourishment, and that this is found in the stomach where there is more or less putridity.

Hence, by way of removing the first cause of disease, by keeping the stomach in a healthy condition, he recommends the constant supply of salt, as a preventive that may be depended on. This, he says, and generous food and treatment, will convince the fly that there is no proper receptacle for her brood in such a well organized stomach. The great Bordley relates, when he resided at his first farm, which was situated inland, his horses were always infested by bots; but on returning to the margin of a tide river, where they drank salt water, no more symptoms were ever known. "An ounce of prevention is worth a pound of cure."

Another writer in the same paper recommends a cure, which he thinks effectual in all cases, if applied before the bots have eaten through the coats of the stomach, a strong decoction of black tea. The proportions he uses are a quarter of a pound of tea, to three pints of boiling water.

Farming in Beach Timbered-land.—"Corn was an uncertain crop; our land was not blessed with a very thick soil, and the subsoil was hard and compact, and held water like a basin. I knew but little about the cultivation of corn; my neighbors, however, thought *they* did, some of them being old corn-raisers; still they did not succeed well. Our plows were of the long-nosed species, and we always acclimated them, so that the wood-work was generally half rotten; our horses, too, were but little better than skin and bone; one of my neighbors used to say they ought to be in bed rather at than work, consequently we were not able to do much more than skin the ground, even where there were no roots; (when we encountered a root of course we backed out,) and to go down to the yellow was out of the question, for it was the firm belief of us all that yellow clay, (our subsoil) was perfect poison to plants."

"I had occasion to drain my well at that early time, as in wet weather it would be always full of water, and running over, and I liked good water, although I was not then a cold-water man; the ditch was deep and covered, it extended through a small field which was afterwards set in grass, and it was observed that the plants grew heavier and better on the top of the bank of yellow clay than any where in the field; after that we were not afraid to plow deeper, our ground became dryer and our corn crops something better.—*Hussey's Address.*

CONTENTS OF THIS NUMBER.

Hints to the Cultivators of Fruit, No. VII; Another method for the destruction of worms; - - - - 129
Downing on Fruits; Beets and Carrots—an Experiment. - 130
Leached Ashes—Inquiries - - - - - 131
Fencing—No I; Box for Bordering—Inquiry. - - 132
Live Fence; New Grass Fields; Wounds on Cattle; To prevent Mice from destroying Fruit Trees in Winter. - 133
Plan of Barns. - - - - - - - 134
Great yield of Corn Fodder; To cure a stifled Horse. - 135
Miscellaneous Notes.—A correction; The Farmer's Library; Scientific American; The Provision Market; Scab in Sheep; Fall-plowing for Oats. - - 136
Inquiry; Prolific Wheat; The Potato Malady. - 137
The Soil of Marsh-meadows; Price of Corn in Illinois - 138
Domestic Economy.—A substitute for Apples in making Mince-pies; Another mode of curing Hams; To scour clothes, &c; Windows cleaned by Steam; Curing Pork—a new method; Curing Beef; Cheap Ice House, or good Cellar for Roots. - - - - 139
Working about right; Prof. Johnston's Lecture. - 140
Efficacy of Ammonia in cases of Poison; Cranberries; To extract oil or grease spots. - - - - 142
Analysis of Soils; **Gleanings.**—Rule for finding the length of day and night; The richest Prairie soil may be exhausted; Sunflower seeds for Fowls; Saving Liquid Manure. - - - - - - 143
Bots—their cause and cure; Farming in Beech timbered Lands. 144

Michigan Farmer.

TERMS.

For single subscribers, 50 cents a year. Five copies for Two Dollars, forwarded in advance by a post-master, or post-paid; and in the same proportion for any larger number. No subscriptions received for less than a year. No back numbers can hereafter be furnished to subscribers as the edition is exhausted.

Advertisements pertaining to Agriculture will be inserted on our last page at $1 75 per folio for 3 months—or at 75 cents for the first insertion, and 50 cents for each continuance.

Storey & Cheney. Book and Job Printers, Jackson, Mich.